Cost-effectiveness of stroke unit care followed by early supported discharge

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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

CRD summary
The aim was to evaluate the cost-effectiveness of combined stroke unit care (SU) with early supported discharge (ESD) for patients with acute stroke, compared with SU without ESD, and compared with treatment in a general medical ward without ESD. The authors concluded that the combined SU with ESD was cost-effective for the management of patients with acute stroke. The methodology of the study appears to have been appropriate and, on the whole, was clearly and transparently reported. The conclusions reached by the authors appear to be appropriate.

Type of economic evaluation
Cost-utility analysis

Study objective
The aim was to evaluate the cost-effectiveness of combined stroke unit care (SU) with early supported discharge (ESD) for patients with acute stroke, compared with SU without ESD, and compared with treatment in a general medical ward (GMW) without ESD.

Interventions
SU with ESD was compared with SU only and compared with treatment in a GMW only. The ESD programme allowed less disabled patients to be discharged early to undergo further rehabilitation at home.

Location/setting
UK/hospital.

Methods
Analytical approach:
A Markov model was constructed to simulate the management of the disease for the three strategies. The time horizon of the analysis was 10 years and the authors stated that a societal perspective was adopted.

Effectiveness data:
The clinical data were derived from the South London Stroke Register (SLSR) and a randomised controlled trial (RCT) of an ESD programme for patients with stroke. The data from SLSR were collected from November 2001 to January 2006. Of the patients enrolled in the ESD trial, 167 were in the ESD group and 164 were in the SU group. The primary outcome was a combination of death and activities of daily living scores as measured by the Barthel Index (BI).

Monetary benefit and utility valuations:
Health-related quality of life values were derived from the BI index using the conversion method developed by van Exel, et al. 2004 (see 'Other Publications of Related Interest' below for bibliographic details).

Measure of benefit:
The summary benefit measure was quality-adjusted life-years (QALYs). These were discounted at an annual rate of 3.5%.

Cost data:
Health care costs and productivity costs were considered. The health care costs included those of the hospital, nursing home, residential home and sheltered home stay. The costs of out-patient drugs and lab test (computed tomography and magnetic resonance imaging) were also considered. The productivity costs were estimated based on income loss due to
mortality or morbidity. The resource use data were estimated based on the SLSR and the ESD trial. These resources were valued using the unit costs from the National Health Service. All costs were expressed in UK pounds sterling (£) and the price year was 2005 to 2006. Discounting was performed at an annual rate of 3.5%.

Analysis of uncertainty:
The uncertainty surrounding the cost-effectiveness estimates was investigated through probabilistic sensitivity analysis. A one-way sensitivity analysis was also performed in which the key inputs were varied to establish how robust the model outcomes were.

Results
When using GMW as the base-case scenario, the total costs per patient in 10 years were £40,500 for GMW, £45,500 for SU, and £46,900 for SU plus ESD. The QALYs gained per patient were 1.679 for GMW, 2.151 for SU, and 2.230 for SU plus ESD. This generated an incremental cost-effectiveness ratio (ICER) of £10,661 per QALY for SU and £11,615 per QALY for SU plus ESD over the GMW.

When using SU as the base-case scenario, the total costs per patient in 10 years were £45,700 for SU and £47,300 for SU plus ESD. The QALYs gained per patient were 2.151 for SU and 2.230 for SU plus ESD. This generated an ICER of £17,721 per QALY for SU plus ESD over SU.

The results of the sensitivity analysis confirmed these base-case findings.

Authors' conclusions
The authors concluded that the combined SU with ESD was cost-effective for the management of patients with acute stroke.

CRD commentary
The methodology of the study appears to have been appropriate and, on the whole, was clearly and transparently reported. The conclusions reached by the authors appear to be appropriate.

Interventions:
The selection of the three comparators was appropriate, as they represented the current practice in the authors' setting. The description of the strategies was clear.

Effectiveness/benefits:
The clinical data were derived from a population-based register and a RCT. The use of a RCT was appropriate and should have ensured the validity of the clinical analysis. However, little information on the source studies was reported, making it difficult to ascertain their strengths and weaknesses.

Costs:
The costs appeared to reflect the perspective stated. The resource use data and the costs were well reported and the costs data appeared to be appropriate for the study population and setting. A breakdown of the cost items was provided will help when replicating the analysis for other settings. The exclusion of some cost categories was justified. Other details of the analysis, such as the price year and discounting were reported, which will assist reflation exercises in other time periods.

Analysis and results:
The model structure was presented graphically along with all the relevant details and modelling assumptions. The authors conducted an appropriate incremental analysis, and the results for non-dominated strategies were fully and clearly presented. Sensitivity analyses were conducted on the modelling assumptions and parameters, enhancing the generalisability of the findings. The authors also acknowledged the main limitations to their analysis.

Concluding remarks:
The methodology of the study appears to have been appropriate and, on the whole, was clearly and transparently reported. The conclusions reached by the authors appear to be appropriate."
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Other publications of related interest


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